

CLAIMS

- 1 1. A low-noise air moving motor assembly comprising:
2 a motor assembly having a rotatable shaft;
3 a fan assembly coupled to said rotatable shaft which generates an airflow
4 that passes over at least a portion of said motor assembly; and
5 a self-extinguishing flame and noise suppression sleeve at least partially
6 disposed around said motor assembly.
- 1 2. The assembly according to claim 1, wherein said fan assembly has an outer
2 diameter and wherein said noise suppression sleeve has a sleeve diameter disposed
3 about said fan assembly outer diameter.
- 1 3. The assembly according to claim 1, wherein said noise suppression sleeve is a
2 foam material with self-extinguishing flame properties.
- 1 4. The assembly according to claim 1, further comprising:
2 a sleeve cover attached to said noise suppression sleeve;
3 said noise suppression sleeve having a shroud end attached to said fan
4 assembly opposite a distal edge which forms a sleeve opening, and said sleeve
5 cover is attached to said distal edge.
- 1 5. The assembly according to claim 4, wherein said sleeve has a cover hole
2 therethrough and wherein said motor assembly extends through said cover hole.
- 1 6. The assembly according to claim 1, wherein said sleeve is in touching contact with
2 said motor assembly.
- 1 7. The assembly according to claim 1, wherein said noise suppression sleeve has a
2 shroud end attached to said fan assembly opposite a distal edge.

- 1 8. The assembly according to claim 7, wherein said distal edge is curved inwardly to
2 form a sleeve opening.
- 1 9. The assembly according to claim 8, wherein said motor assembly extends through
2 said sleeve opening and said distal edge is in touching contact with said motor
3 assembly.
- 1 10. The assembly according to claim 1, wherein said fan assembly comprises:
2 a fan secured to said shaft;
3 a diffuser/bracket assembly coupled to said motor assembly, said
4 diffuser/bracket assembly rotatably receiving said shaft;
5 a fan shroud secured to said diffuser/bracket assembly, wherein rotation of
6 said fan draws air in through said fan shroud and out said diffuser/bracket
7 assembly, said diffuser/bracket assembly having at least one foam piece coupled
8 thereto to reduce the noise of air flowing therethrough.
- 1 11. The assembly according to claim 10, wherein said diffuser/bracket assembly
2 comprises:
3 a fan end bracket; and
4 a diffuser coupled to said fan end bracket;
5 said fan end bracket comprising a planar plate having bracket openings
6 therethrough adjacent said at least one motor bracket, said at least one foam piece
7 disposed on said at least one motor bracket adjacent said bracket opening to absorb
8 noise.
- 1 12. The assembly according to claim 10, wherein said diffuser/bracket assembly
2 comprises:
3 a fan end bracket having at least one motor bracket for carrying said motor
4 assembly, said fan end bracket having a motor opening therethrough; and
5 a diffuser coupled to said fan end bracket, said diffuser having a plurality
6 of peripheral openings therethrough, said diffuser having a plurality of blades

7 extending from one side thereof toward said fan end bracket, said at least one foam
8 piece disposed on at least one of said plurality of blades to absorb noise.

1 13. The assembly according to claim 12, wherein said blades are curvilinear and
2 provide a concave surface, said foam being disposed on said concave surfaces.

1 14. The assembly according to claim 10, wherein said diffuser/bracket assembly
2 comprises:

3 a fan end bracket having at least one motor bracket for carrying said motor
4 assembly, said fan end bracket having a motor opening therethrough; and

5 a diffuser coupled to said fan end bracket, said diffuser having a plurality
6 of channels extending from one side thereof toward said fan end bracket, said at
7 least one foam piece disposed on at least one of said plurality of blades to absorb
8 noise.

1 15. The assembly according to claim 13, wherein said channels are curvilinear and
2 provide a concave surface, said foam being disposed on said concave surfaces.

1 16. A low noise air-moving motor assembly, comprising:

2 a motor assembly having a rotatable shaft; and

3 a fan assembly coupled to said motor assembly, said fan assembly including
4 a fan secured to said shaft;

5 a fan end bracket for carrying said motor assembly, said fan end bracket
6 having bracket openings therethrough, and a diffuser coupled to said fan end
7 bracket, said diffuser having openings therethrough, wherein rotation of said fan
8 generates an airflow that passes through said bracket openings and said openings,
9 said fan end bracket carrying at least one foam piece to absorb noise generated by
10 said fan.

1 17. The assembly according to claim 16, further comprising:

2 a noise suppression sleeve at least partially disposed around said motor
3 assembly.

- 1 18. The assembly according to claim 16, wherein said fan end bracket has at least one
2 motor bracket for carrying said motor assembly, said bracket openings adjacent
3 said at least one motor bracket, said at least one motor bracket having noise
4 suppression foam disposed thereon.
- 1 19. The assembly according to claim 16, wherein said diffuser has a plurality of
2 curvilinear blades which direct the airflow from the fan toward said motor
3 assembly, said curvilinear blades having noise suppression foam disposed thereon.
- 1 20. The assembly according to claim 16, further comprising:
2 a noise suppression sleeve at least partially disposed around said motor
3 assembly, wherein said sleeve and said at least one foam piece exhibits self-
4 extinguishing flame properties.
- 1 21. The assembly according to claim 16, further comprising:
2 a fan shroud at least partially enclosing said fan assembly and secured to
3 said fan end bracket, said fan shroud having an inlet port.
- 1 22. The assembly according to claim 21, further comprising:
2 a noise suppression sleeve positioned about said fan assembly, wherein
3 said fan shroud has a plurality of exhaust ports, and said sleeve is placed in close
4 proximity to said exhaust ports.
- 1 23. The assembly according to claim 21, further comprising:
2 a noise suppression sleeve having at least one internal flange that forms a
3 labyrinth flow path, said fan shroud having a tangential exhaust port, and said
4 sleeve fitting upon said tangential exhaust port.